

CLAIMS

The invention claimed is:

1. A dynamic business process management system comprising:
- a knowledge base including expert knowledge about one or more business
- 5 process domains;
- an inference engine coupled to the knowledge base, the inference engine
- including a partial order planner;
- a management system that collects and distributes data regarding one or more
- business processes and determines one or more goals; and
- 10 a graphical user interface system that displays information regarding the one
- or more business processes;
- wherein the inference engine uses the partial order planner to determine a plan
- for achieving at least one of the one or more goals.
- 15 2. The system of claim 1, wherein the knowledge base includes one or more
- plan-goal graphs.
3. The system of claim 1, wherein the knowledge base includes one or more
- concept graphs.
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4. The system of claim 3, wherein the inference engine creates one or more plan instances.

5. The system of claim 3, wherein at least one of the one or more concept  
5 graphs includes a non-monotonic model of economic benefit provided by the plan instances created by the inference engine.

6. The system of claim 4, wherein the inference engine manages life cycle  
states of the one or more plan instances according to a commitment level of the partial  
10 order planner.

7. The system of claim 6, wherein the inference engine manages monitoring  
of the situation using the one or more concept graphs according to the life cycle states  
of the one or more plan instances.

8. The system of claim 7, wherein the inference engine determines what  
further processing is needed by the partial order planner based on the monitoring of  
the situation.

9. The system of claim 1, wherein the knowledge base includes one or more scripts, each of the one or more scripts comprising a sequence of fully or partially-specified actions.

5           10. The system of claim 1, wherein the inference engine includes an intent interpreter.

11. The system of claim 1, wherein the inference engine includes a non-monotonic truth maintenance system.

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12. The system of claim 1, wherein a plurality of distributed dynamic business process management systems, each containing an inference engine communicate data defining the situations and plans of each organization.

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13. The system of claim 12, wherein the inference engine detects conflicts between the plans of the participating organizations and notifies the conflicting parties of the nature of the conflict.

14. The system of claim 1, further comprising a data security mechanism that  
20 protects data stored in the knowledge base.

15. The system of claim 14, wherein the data security mechanism maintains an access control list for one or more tables in the knowledge base.

16. The system of claim 15, wherein the data security mechanism maintains  
5 an access control list for one or more data records in the knowledge base.

17. The system of claim 1, wherein the partial order planner is a least commitment planner.

18. A method for conducting business process management, the method  
10 comprising:

determining a goal for a user of the business process management system; and  
using a knowledge base to create a plan for meeting the determined goal.

19. The method of claim 18, wherein the act of determining a goal and  
15 creating a plan for meeting the goal is performed using a partial order planner.

20. The method of claim 19, wherein the partial order planner is a least commitment planner.

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21. The method of claim 18, wherein the act of determining a goal is performed using a non-monotonic truth maintenance system.

22. The method of claim 18, wherein the knowledge base includes one or  
5 more plan-goal graphs.

23. The method of claim 18, wherein the knowledge base includes one or more concept graphs.

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10 24. A dynamic business process management system comprising:  
a plurality of intelligent agents, each of the plurality of intelligent agents including:

a knowledge base including expert knowledge about one or more business process domains;

15 an inference engine coupled to the knowledge base, the inference engine including a partial order planner;

a data management system that collects and distributes data regarding one or more business processes; and

20 a graphical user interface system that displays information regarding the one or more business processes.

25. The dynamic business process management system of claim 24, wherein the knowledge base includes one or more concept graphs.

26. The dynamic business process management system of claim 25, wherein  
5 each agent of the plurality of intelligent agents determines the intentions of one or more users and wherein the data management system of a first agent of the plurality of intelligent agents shares data with a second agent of the plurality of intelligent agents representing the determined intentions of the one or more users to facilitate collaboration.

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27. The dynamic business process management system of claim 26, wherein the system uses the shared data to automatically detect conflicts between the one or more users.

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